

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

- 1        1.        A method of indicating when changes to values of data fields in a document have occurred,  
2        said method comprising the steps of:
  - 3                (a)                storing a first plurality of values in at least one first object, said first  
4                                        plurality of values comprising initial values of a plurality of data  
5                                        fields in a document;
  - 6                (b)                storing a second plurality of values in at least one second object,  
7                                        said second plurality of values being identical to said first plurality  
8                                        of values;
  - 9                (c)                receiving modifications from a user to said data fields and storing  
10                                        said modifications in said at least one second object as current  
11                                        values;
  - 12                (d)                comparing said first and second plurality of values to determine  
13                                        which data fields have initial values different from their current  
14                                        values;
  - 15                (e)                creating a plurality of records identifying all data fields having  
16                                        initial values different from their current values as determined in  
17                                        step (d); and
  - 18                (f)                transmitting said plurality of records to a server, said plurality of  
19                                        records for use in updating data in a data storage device.

1        2.        The method as claimed in claim 1, wherein said document is an HTML document containing  
2        an HTML form.

1        3.        The method as claimed in claim 2, wherein step (a) is performed when said HTML form is  
2        loaded into a web browser.

4. The method as claimed in claim 3, wherein step (d) is performed after said modifications have been completed by said user.

1 5. The method as claimed in claim 4, wherein said plurality of records comprise a plurality of  
2 data field identifiers, and wherein each of said data field identifiers identifies one of said plurality  
3 of data fields in said document.

1 6. The method as claimed in claim 5, wherein said plurality of records further comprise a  
2 boolean value assigned to each of said data field identifiers to indicate whether said data field has  
3 an initial value different from its current value as determined in step (d).

1 7. The method as claimed in claim 1, wherein said document comprises a notebook.

1 8. The method as claimed in claim 7, wherein said notebook comprises at least one panel.

1 9. The method as claimed in claim 8, wherein step (a) is performed when said notebook is  
2 opened.

1 10. The method as claimed in claim 9, wherein step (d) is performed on data in a panel of said  
2 at least one panel after said modifications have been completed by said user.

1 11. The method as claimed in claim 10, wherein step (e) is performed for said panel of said at  
2 least one panel, wherein said plurality of records created comprise a plurality of data field identifiers,  
3 and wherein each of said data field identifiers identifies one of said plurality of data fields in said  
4 panel.

1 12. The method as claimed in claim 11, wherein said plurality of records further comprise a  
2 boolean value assigned to each of said data field identifiers to indicate whether said data field has  
3 an initial value different from its current value as determined in step (d).

1 13. The method as claimed in claim 12, wherein steps (d), (e) and (f) are repeated for each panel  
2 in a notebook.

1 14. The method as claimed in claim 13, wherein said plurality of records are used to determine  
2 at least one of the following:

- 3 (i) whether a data field has an initial value different from its current  
4 value;  
5 (ii) whether a panel comprises a data field having an initial value  
6 different from its current value; and  
7 (iii) whether said notebook comprises a panel which comprises a data  
8 field having an initial value different from its current value.

1 15. The method as claimed in claim 1, wherein said document comprises a hierarchy of  
2 documents, and wherein said plurality of records are used to determine whether a data field having  
3 an initial value different from its current value exists at a specified level of said hierarchy of  
4 documents.

1 16. A system for indicating when changes to values of data fields in a document have occurred,  
2 said system comprising:

- 3 (a) at least one first object for storing a first plurality of values, said  
4 first plurality of values comprising initial values of a plurality of  
5 data fields in a document;  
6 (b) at least one second object for storing a second plurality of values,  
7 said second plurality of values comprising current values of said  
8 plurality of data fields in said document; and

9 (c) a module connected to said at least one first and said at least one  
10 second objects for comparing said first and second plurality of  
11 values, for determining which data fields have initial values  
12 different from their current values, and for creating a plurality of  
13 records identifying all data fields having initial values different  
14 from their current values.

1 17. The system as claimed in claim 16, wherein said document is an HTML document containing  
2 an HTML form.

1 18. The system as claimed in claim 17, wherein said plurality of records comprise a plurality of  
2 data field identifiers, and wherein each of said data field identifiers identifies one of said plurality  
3 of data fields in said document.

1 19. The system as claimed in claim 18, wherein said plurality of records further comprise a  
2 boolean value assigned to each of said data field identifiers to indicate whether said data field has  
3 an initial value different from its current value.

1 20. The system as claimed in claim 16, wherein said document is comprises a notebook.

1 21. The system as claimed in claim 20, wherein said notebook comprises at least one panel.

1 22. The system as claimed in claim 21, wherein said plurality of records created comprise a  
2 plurality of data field identifiers, and wherein each of said data field identifiers identifies one of said  
3 plurality of data fields in said panel.

1 23. The system as claimed in claim 22, wherein said plurality of records further comprise a  
2 boolean value assigned to each of said data field identifiers to indicate whether said data field has  
3 an initial value different from its current value.

1 24. The system as claimed in claim 23, wherein said plurality of records are used to determine  
2 at least one of the following:

- 3 (i) whether a data field has an initial value different from its current  
4 value;  
5 (ii) whether a panel comprises a data field having an initial value  
6 different from its current value; and  
7 (iii) whether said notebook comprises a panel which comprises a data  
8 field having an initial value different from its current value.

1  
2 25. The system as claimed in claim 16, wherein said document comprises a hierarchy of  
3 documents, and wherein said plurality of records are used to determine whether a data field having  
4 an initial value different from its current value exists at a specified level of said hierarchy of  
5 documents.

6  
7 26. A computer-readable medium having stored thereon computer-executable instructions for  
8 indicating when changes to values of data fields in a document have occurred by performing the  
9 steps comprising:

- 10 (a) storing a first plurality of values in at least one first object, said first  
11 plurality of values comprising initial values of a plurality of data  
12 fields in a document;  
13 (b) storing a second plurality of values in at least one second object,  
14 said second plurality of values being identical to said first plurality  
15 of values;  
16 (c) receiving modifications from a user to said data fields and storing  
17 said modifications in said at least one second object as current  
18 values;

13 (d) comparing said first and second plurality of values to determine  
14 which data fields have initial values different from their current  
15 values;  
16 (e) creating a plurality of records identifying all data fields having  
17 initial values different from their current values as determined in  
18 step (d); and  
19 (f) transmitting said plurality of records to a server, said plurality of  
20 records for use in updating data in a data storage device.

1 27. The computer-readable medium as claimed in claim 26, wherein said document is an HTML  
2 document containing an HTML form.

1 28. The computer-readable medium as claimed in claim 27, wherein step (a) is performed when  
2 said HTML form is loaded into a web browser.

1 29. The computer-readable medium as claimed in claim 28, wherein step (d) is performed after  
2 said modifications have been completed by said user.

1 30. The computer-readable medium as claimed in claim 29, wherein said plurality of records  
2 comprise a plurality of data field identifiers, and wherein each of said data field identifiers identifies  
3 one of said plurality of data fields in said document.

1 31. The computer-readable medium as claimed in claim 30, wherein said plurality of records  
2 further comprise a boolean value assigned to each of said data field identifiers to indicate whether  
3 said data field has an initial value different from its current value as determined in step (d).

1 32. The computer-readable medium as claimed in claim 26, wherein said document comprises  
2 a notebook.

1 33. The computer-readable medium as claimed in claim 32, wherein said notebook comprises at  
2 least one panel.

1 34. The computer-readable medium as claimed in claim 33, wherein step (a) is performed when  
2 said notebook is opened.

1 35. The computer-readable medium as claimed in claim 34, wherein step (d) is performed on data  
2 in a panel of said at least one panel after said modifications have been completed by said user.

1 36. The computer-readable medium as claimed in claim 35, wherein step (e) is performed for said  
2 panel of said at least one panel, wherein said plurality of records created comprise a plurality of data  
3 field identifiers, and wherein each of said data field identifiers identifies one of said plurality of data  
4 fields in said panel.

1 37. The computer-readable medium as claimed in claim 36, wherein said plurality of records  
2 further comprise a boolean value assigned to each of said data field identifiers to indicate whether  
3 said data field has an initial value different from its current value as determined in step (d).

1 38. The computer-readable medium as claimed in claim 37, wherein steps (d), (e) and (f) are  
2 repeated for each panel in a notebook.

1 39. The computer-readable medium as claimed in claim 38, wherein said plurality of records are  
2 used to determine at least one of the following:

- 3 (i) whether a data field has an initial value different from its current  
4 value;  
5 (ii) whether a panel comprises a data field having an initial value  
6 different from its current value; and  
7 (iii) whether said notebook comprises a panel which comprises a data  
8 field having an initial value different from its current value.

1 40. The computer-readable medium as claimed in claim 26, wherein said document comprises  
2 a hierarchy of documents, and wherein said plurality of records are used to determine whether a data  
3 field having an initial value different from its current value exists at a specified level of said  
4 hierarchy of documents.

1 41. A software product for indicating when changes to values of data fields in a document have  
2 occurred, said software product comprising:

- 3 (a) at least one first object for storing a first plurality of values, said  
4 first plurality of values comprising initial values of a plurality of  
5 data fields in a document;
- 6 (b) at least one second object for storing a second plurality of values,  
7 said second plurality of values comprising current values of said  
8 plurality of data fields in said document; and
- 9 (c) a module connected to said at least one first and said at least one  
10 second objects for comparing said first and second plurality of  
11 values, for determining which data fields have initial values  
12 different from their current values, and for creating a plurality of  
13 records identifying all data fields having initial values different  
14 from their current values.

1 42. The software product as claimed in claim 41, wherein said document is an HTML document  
2 containing an HTML form.

1 43. The software product as claimed in claim 42, wherein said plurality of records comprise a  
2 plurality of data field identifiers, and wherein each of said data field identifiers identifies one of said  
3 plurality of data fields in said document.



1 44. The software product as claimed in claim 43, wherein said plurality of records further  
2 comprise a boolean value assigned to each of said data field identifiers to indicate whether said data  
3 field has an initial value different from its current value.

1 45. The software product as claimed in claim 41, wherein said document is comprises a notebook.

1 46. The software product as claimed in claim 45, wherein said notebook comprises at least one  
2 panel.

1 47. The software product as claimed in claim 46, wherein said plurality of records created  
2 comprise a plurality of data field identifiers, and wherein each of said data field identifiers identifies  
3 one of said plurality of data fields in said panel.

1 48. The software product as claimed in claim 47, wherein said plurality of records further  
2 comprise a boolean value assigned to each of said data field identifiers to indicate whether said data  
3 field has an initial value different from its current value.

1 49. The software product as claimed in claim 48, wherein said plurality of records are used to  
2 determine at least one of the following:

- 3 (i) whether a data field has an initial value different from its current  
4 value;
- 5 (ii) whether a panel comprises a data field having an initial value  
6 different from its current value; and
- 7 (iii) whether said notebook comprises a panel which comprises a data  
8 field having an initial value different from its current value.

1 50. The software product as claimed in claim 41, wherein said document comprises a hierarchy  
2 of documents, and wherein said plurality of records are used to determine whether a data field having

3 an initial value different from its current value exists at a specified level of said hierarchy of  
4 documents.

1 51. A computer program comprising computer program code means adapted to perform all the  
2 steps of claim 1 when said program is run on a computer.

1 52. A computer program as claimed in claim 51 embodied on a computer readable medium.

1 53. A computer program product comprising:  
2 a computer-readable signal-bearing medium;  
3 means in said medium for accomplishing the method of any of claims 1 to 15.

4 54. The product of claim 45, wherein said medium is a recordable data storage medium.

5 55. The product of claim 53 wherein said medium is a modulated carrier signal.

6 56. The product of claim 55 wherein said signal is a transmission over a network.

7 57. The product of claim 56 wherein said network is the Internet.